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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/530,684

04/25/2005

Jorg Mayer

FRG-15998

7308

40854 7590 09/02/2010

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EXAMINER

BALLINGER, MICHAEL ROBERT

ART UNIT

PAPER NUMBER

3732

NOTIFICATION DATE

DELIVERY MODE

09/02/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/530,684	Applicant(s) MAYER ET AL.	
	Examiner Michael R. Ballinger	Art Unit 3732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26, 46 and 47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 and 46-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In acknowledgement of the amendments filed 24 May 2010, claims 1-26 and 46-47 are currently pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-19, 21-26 and 46-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aeschlimann et al. (WO/02069817) in view of Schulte et al. (U.S. 5,199,873) and further in view of Lang (U.S. 5,088,926).**

4. Per claim 1 and 46-47, figures 20-22 of Aeschlimann teaches a bone implant (i.e. implant 7) suitable for implantation in an implantation direction parallel to an implant axis in a cavity surrounded by a cavity wall of bone tissue (i.e. jawbone, 32), including implant portion including a first type of surface ranges (i.e. cylindrical piece, 44) of a material that is liquefiable by mechanical oscillation (page 18, lines 11-16 of translation) or a second type surface ranges (44) formed by pressing the liquefiable material out of a hollow space (i.e. porous sleeve material, page 18, line 14) and the implant portion includes cutting edges (i.e., C, D, and E, as illustrated below), the cutting edges are located outside the surface ranges (44), the cutting edges not extending in a common plane with the implant axis, face towards the distal end region of the implant and extend partly around the circumference of the implant (i.e., the cutting edges extend

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partly around the circumference of the implant, as evidenced by the cross-sectional view of figure 22).

5. The Examiner notes, Aeschlimann fails to explicitly teach the cutting edges are capable of cutting the cavity wall of bone tissue, that the cutting edges are distanced from the implant axis by an implant-axis-to-cutting-edge-distance which decreases in the implantation direction or that the implant is shaped to be implanted without substantial rotation. Figure 1 of Schulte et al. teaches a implant including cutting edges capable of cutting the cavity wall of bone tissue (i.e., self-tapping threads, 24, 25, and 26, column 5, lines 13-16) and that the cutting edges are distanced from the implant axis by an implant axis-to-cutting-edge-distance which decreases in the implantation direction (i.e., cutting edge 24 has a greater implant-axis-to-cutting-distance than cutting edge 25, and cutting edge 25 has a implant-axis-to-cutting-distance than cutting edge 26). Additionally, Schulte teaches the stepped configuration allows for the implant to be implanted with reduced rotation (column 3, lines 27-55 and column 5, line 62 to column 6, line 2). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Aeschlimann to include the thread configuration of Schulte in order to substantially reduce the stress and strain on the tissue (column 3, lines 37-39).

6. The Examiner notes, the specification at paragraph 0019 states, "[b]ecause the implant according to the invention is implanted essentially without rotation (in particular without rotation greater than 360°)". Thus the Examiner has construed the limitation "without substantial rotation" to mean any rotation of 360° or less. While the combination of Aeschlimann and Schulte teach the device as substantially claimed, the Examiner notes, neither explicitly teaches the implant is shaped to be implanted without substantial rotation (Schulte teaches a rotation of

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three turns or 1080°). However, Lang teaches an implant shaped to be implanted with a rotation of less than 90° (column 1, lines 52-56). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Aeschlimann and Schulte to be implanted without substantial rotation (i.e., less than 360° or rotation) as taught by Lang, in order to lessen the stress and stain on the bone tissue of the cavity.

7. Per claims 2-4, Aeschlimann teaches the cutting edges have a wedge angle of less than 90 degrees (as illustrated below), are salient (i.e. cutting edges on the left side of figure 22 are jetting upward) and are under cut to form a chip space (as illustrated below).

8. Per claims 6 and 7, figure 8 of Aeschlimann teaches openings (i.e. the openings in sleeve, 13) leading into depressions (i.e. the openings are depressed into the sleeve) and the depressions are grooves extending axially (i.e. top to bottom of figure 8) in the implant region.

9. Per claim 8, figure 22 teaches osseointegrative surfaces are situated between the surface ranges of the liquefiable material (as illustrated below).

10. Per claims 10 and 13 figure 22 clearly indicates the cutting edges extending along parts of the circumference of the implant forming lower edges of scale like structure and the implant tapering towards a distal end.

11. Per claim 12, figure 22 teaches the proximal end region includes a ring (i.e. top portion of cylindrical piece, 44) of thermoplastic material (i.e. polyester, page 12, lines 30-31 as the liquefiable material).

12. Per claim 14 and 15, figure 22 of Aeschlimann teaches the implant including steps with cutting edges, the steps having edges with wedge angles of 90 degrees or more (as illustrated below). Also, per claim 16, Aeschlimann teaches the implant has an essentially cylindrical form

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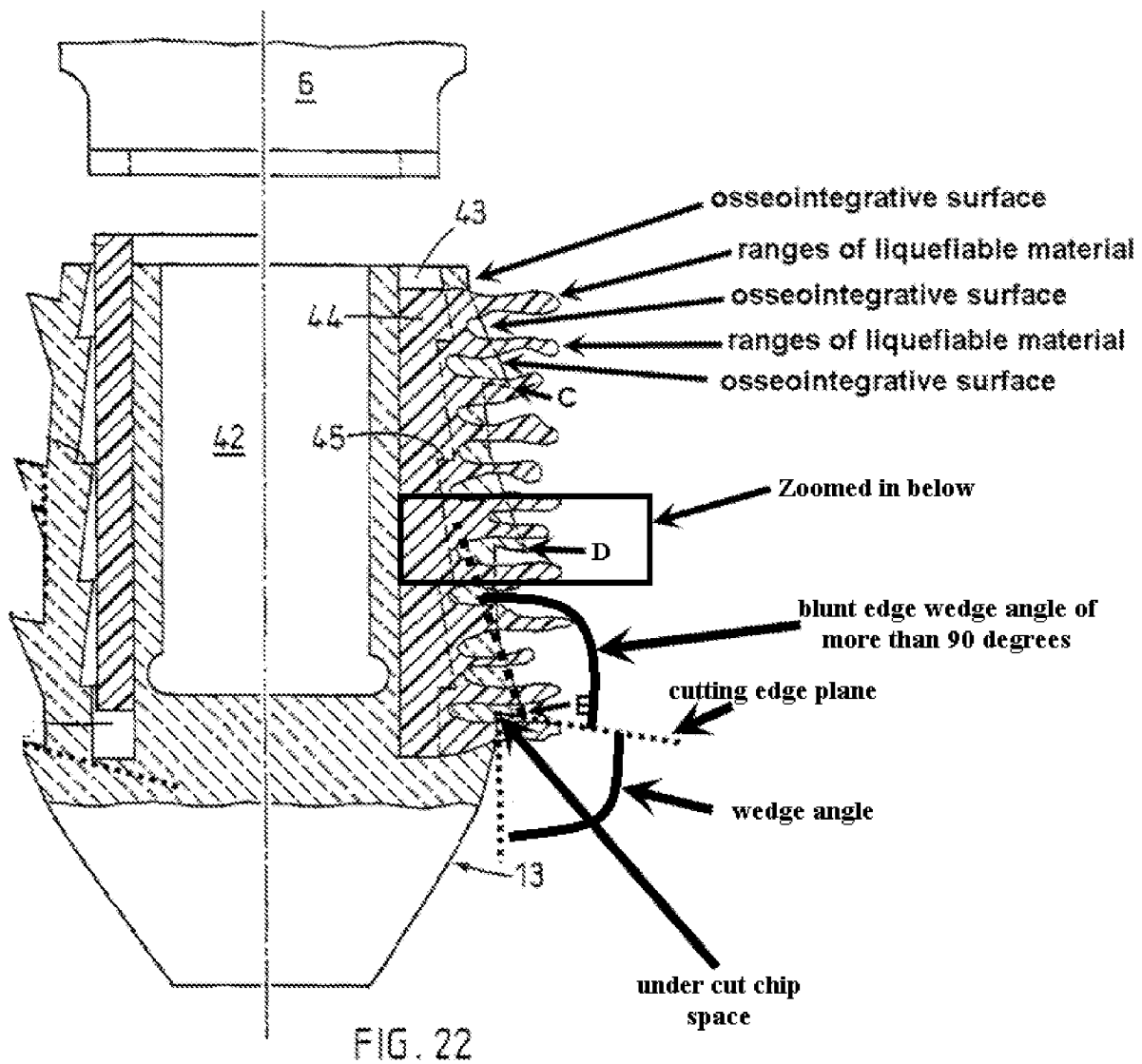
and cutting edges protruding from the implant and being distanced from the implant axis by distances which decrease in the direct of the implantation (i.e. cutting edge C is further from the implant axis than cutting edge E as illustrated below).

13. Per claim 17 figure 22 of Aeschlimann illustrates the cutting edges are aligned in series in the axial direction (i.e. cutting edges C-D-E as illustrated below). Furthermore, per claim 18, figure 22 teaches two series of cutting edges (i.e. C-D-E as illustrated below) facing each other, and surface ranges of liquefiable material are situated between the series on the implant structure (illustrated below).

14. Per claim 19, Aeschlimann teaches a hollow space (42: figure 22) and a piston (i.e. bottom cylindrical portion of artificial tooth, 42 shown in figure 20).

15. Per claims 21-23 , figure 20 of Aeschlimann teaches the implant is a dental implant which carries an intermediate element (i.e. artificial tooth, 40) and the intermediate element is connected by a loose fit connection (page 17, lines 27-34).

16. Per claim 24, Aeschlimann teaches means for fastening an abutment, a crown, a bridge or a set of dentures (page 17, lines 29-30). Per claims 25 and 26, figure 27 of Aeschlimann teaches the implant is a shaft which is adapted to bridge a bone defect.



17. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aeschlimann et al. (WO/02069817 A1) Schulte et al. (U.S. 5,199,873) and Lang (U.S. 5,088,926) as applied to claim 1 above, and further in view of Lazarof (U.S. 6,142,782)

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18. The Examiner notes the claim includes claim element “means for an insulating connection”, is a means plus function limitation that invokes 35 U.S.C. 112, sixth paragraph. The written description discloses this "means" as "the piston is equipped with finely pitched thread 44, when pushed into the hollow space, 26 is cold-welded to the wall of the hollow space”. Therefore, the Examiner has interpreted this limitation as threading which when compressed creates a cold welding between the piston and implant and equivalents.

Aeschlimann, Schulte, and Lang fail to explicitly disclose this limitation; however, Lazarof teaches a piston (i.e. draw screw, 80) including a threaded portion (i.e. threaded shank, 86) which when compressed into the implant (60) causes a cold welding connection (column 7, lines 42-60). Therefore, it would have been obvious to one having ordinary skill in the art at the time then invention was made to modify the piston-implant connection of Aeschlimann Schulte, and Lang to include the threaded cold-welding connection of Lazarof, in order to prevent harmful bacteria from entering the internal hollow of the implant.

Response to Arguments

19. Applicant's arguments filed 24 May 2010 have been fully considered but they are not persuasive.

20. On page 10 of the remarks Applicant has argued that the first instance of liquefiable surface ranges are not taught because the liquefiable material of Aeschlimann is pushed through the porous surface of the sleeve. First the Examiner notes, Aeschlimann teaches a material liquefiable by mechanical oscillation (see e.g., page 4, lines 34 to page 5, line 5 and page 18, lines 11-16). The Examiner disagrees with Applicant's assertion that the liquefiable material must be on the implant surface before it is implant, as this limitation does not appear in the

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claims. The Examiner submits, the claim merely requires an implant portion including ranges of a material which is liquefiable by mechanical oscillation. The claim does not require the material to be present on the exterior surface of the implant prior to insertion as argued by Applicant. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The liquefiable material 44 meets the limitation surface ranges as it has a is contacting a surface of the implant portion and covers an area of that surface. Furthermore, even if the claims required the surfaces ranges to be on the exterior of the surface prior to insertion as argued by Applicant, Aeschlimann at least renders obvious such a configuration in figures 6 and 7 which clearly show liquefiable material on the exterior surface of an implement (see pages 13-14).

21. Applicant has also argued the combination of Aeschlimann and Nikoghossian fails to teach a implant portion which is shaped to be implanted without substantial rotation. The Examiner submits the new grounds of rejection as laid out above renders these arguments moot.

Conclusion

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael R. Ballinger whose telephone number is (571)270-5567.

The examiner can normally be reached on Monday thru Friday 8:00 AM to 5:00 PM.

24. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cris L. Rodriguez can be reached on (571)272-4964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael R Ballinger/
Examiner, Art Unit 3732

/Cris L. Rodriguez/
Supervisory Patent Examiner, Art Unit 3732